

**Notice of Allowability**

Application No.

09/724,548

Examiner

Brian J. Sines

Applicant(s)

QUAKE ET AL.

Art Unit

1743

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_.
2. ☒ The allowed claim(s) is/are 1,2,5,7-12,14-16,18-57 and 59-69.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date ____.    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other ____.   |

## DETAILED ACTION

### *Double Patenting*

The nonstatutory double patenting of the present claims over claims 1 – 69 of copending patent application no. 10/801,361 in the office action mailed 9/6/2006 has been withdrawn.

### *Allowable Subject Matter*

Claims 1, 2, 5, 7 – 12, 14 – 16, 18 – 57 and 59 – 69 are allowed.

The following is an examiner's statement of reasons for allowance:

1. Regarding claim 1, the cited prior art neither teach nor fairly suggest a microfluidic device comprising:

a loop channel communicating with one or more service channels, wherein each service channel comprises a microvalve that when closed separates the service channel and the loop channel and wherein when said microvalves are closed said loop channel is a closed path, and

a peristaltic pump comprising at least three cooperating microvalves within the loop channel,

wherein the loop channel resides in a layer of elastomeric material and the microvalves comprise an elastomeric membrane.

2. Regarding claim 31, the cited prior art neither teach nor fairly suggest a microfluidic device comprising:

a treatment layer having elastomeric fluid channels comprising:

a loop channel,

a loop inlet channel, and

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a loop outlet channel,

a control layer adjacent to the treatment layer and having elastomeric control channels, wherein at least one control channel intersects each of the inlet and outlet channels to form microvalves, said microvalves comprising an elastomeric membrane between the control channel and the fluid channel which can be deformed where the channels intersect to close the microvalve, and

at least three control channels intersect the loop channel to form a peristaltic pump.

3. Regarding claim 57, the cited prior art neither teach nor fairly suggest a microfluidic device comprising: a plurality of loop channels, each loop channel communicating with at least one service channel; and wherein each loop channel is associated with a peristaltic pump comprising at least three microvalves acting within the loop channel.

4. Regarding claim 60, the cited prior art neither teach nor fairly suggest a microfluidic device comprising:

a treatment layer having elastomeric fluid channels comprising

at least one inlet channel,

at least one outlet channel, and

a plurality of loop channels; and

a control layer adjacent to the treatment layer and having a plurality of parallel elastomeric control channels, wherein at least three control channels intersect each loop channel to form a peristaltic pump.

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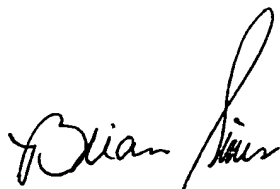
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Brian J. Sines". The signature is stylized with a large, looping initial "B" and a trailing flourish.